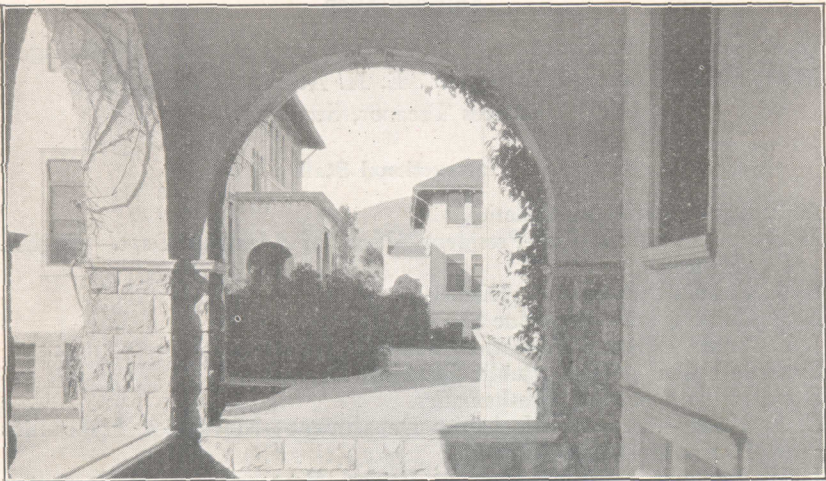


# CATALOGUE

OF THE

## California Polytechnic School

State School of Agriculture, Mechanics  
and Home Making



San Luis Obispo, California

1925 - 1926

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1925

**CALIFORNIA POLYTECHNIC SCHOOL**  
Administered Through  
**THE STATE DEPARTMENT OF EDUCATION**

HON. WILL C. WOOD,  
Superintendent of Public Instruction.

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**FACULTY**

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Margaret H. Chase, Vice-President. E. H. Atkinson, Accountant.  
Frances Treanor, Secretary.

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.....—Farm Shop and Mechanics.  
.....—Modern Languages, Physical Educa-  
tion for Women.  
.....—Animal Husbandry, Dairying.

# SCHOOL CALENDAR

## 1925-1926

1925

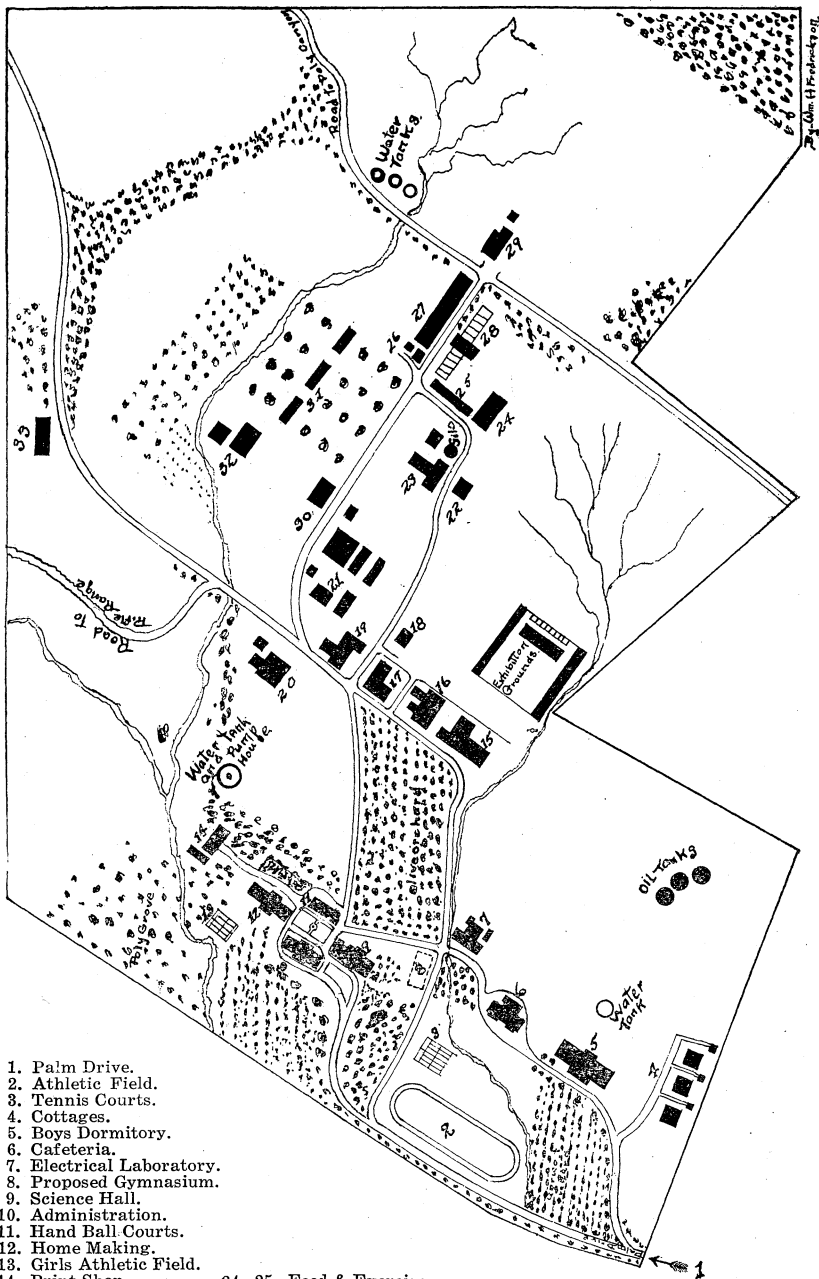
1926

Annual Conference State Agricultural Teachers Association.....Aug. 3-6  
 Registration of new students...Monday, Sept. 7  
 Registration of old students..Tuesday, Sept. 8  
 Admission Day (legal holiday).....Wednesday, Sept. 9  
 Class work begins..Thursday, Sept. 10  
 Student "Labor Day"....Friday, Oct. 30  
 Home-coming Day....Saturday, Nov. 7  
 Armistice Day....Wednesday, Nov. 11  
 Thanksgiving Recess.....Thursday to Sunday, Nov. 26-29  
 Christmas Vacation.....Dec. 18-Jan. 3

Class work begins....Monday, Jan. 4  
 End of First Semester..Friday, Jan. 22  
 Beginning of Second Semester..Monday, Jan. 25  
 Spring Vacation.....April 2-11  
 Class work begins....Monday, April 12  
 School Festival.....Saturday, May 1  
 Decoration Day.....Sunday, May 30  
 Alumni Reunion....Thursday, June 3  
 Commencement.....Thursday, June 3  
 School Closes.....Friday, June 4  
 Agricultural Projects continued during summer.

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1. Palm Drive.
2. Athletic Field.
3. Tennis Courts.
4. Cottages.
5. Boys Dormitory.
6. Cafeteria.
7. Electrical Laboratory.
8. Proposed Gymnasium.
9. Science Hall.
10. Administration.
11. Hand Ball Courts.
12. Home Making.
13. Girls Athletic Field.
14. Print Shop.
15. Auto Mechanics.
16. Forge.
17. Machine Shop.
- 18, 19. Carpentry.
20. Creamery.
21. Green Houses.
- 22, 23. Dairy Barns.
- 24, 25. Feed & Exercise Sheds.
26. Slaughter House.
- 27, 28. Piggery.
29. Horse Barn.
- 30, 31, 32. Poultry.
33. Farm Machinery Storage.



## GROUNDS AND BUILDINGS

### THE SCHOOL GROUNDS

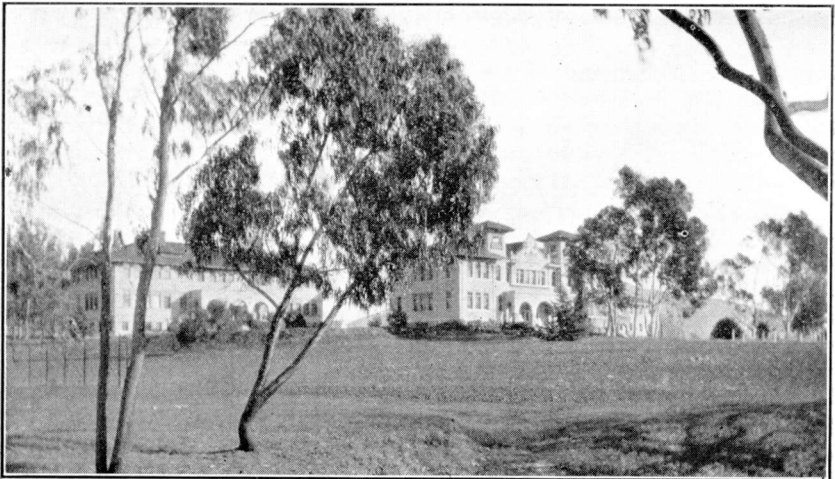
The school grounds comprise nearly one thousand acres. Approximately four hundred acres of this is tillable land with the remaining six hundred acres of hill land used as range for the dairy and beef cattle, horses and sheep of the Agricultural Department of the school. That part of the grounds, thirty acres in extent, lying immediately around the buildings constitutes the campus and athletic field. This is a slightly undulating plot tastefully planted to ornamental trees and shrubs and carefully landscaped to provide for grouping of the shops, laboratories and classrooms of the several departments. Broad walks and drives traverse the entire campus, rendering each objective point easily accessible. The half mile of "Palm Drive" leading from the city of San Luis Obispo to the campus, the Boys' Dormitory and the President's residence is a typical beauty spot of California.

### THE SCHOOL BUILDINGS

Following is a brief description intended to convey a general idea of the principal buildings and the purposes for which they are used:

**The Administration Building** is a three-story stone and cement structure 54 by 100 feet. In addition to the President's office this contains the general administrative offices, classrooms for agriculture, English, history and some engineering classes. The department of music, dramatics and public speaking uses the east portion of the upper floor. The lower floor is occupied by the military department as an armory and by the department of agricultural chemistry with a large laboratory.

**Science Hall** forming the second side of a triangle with the Administration Building is a three-story cement building 54 by 100 feet. The entire lower floor is devoted to two well equipped laboratories of chemistry and physics. The second floor is occupied by the students' co-operative store and the combined study hall and library. One-half of the third floor is used



TWO OF THE TWENTY-THREE CAMPUS BUILDINGS

for general classrooms and the entire south wing of the third floor is a large engineering drafting room arranged with lights on three sides of the drafting tables.

**The Home Making Building** is a three-story cement building 54 by 100 feet, forming the third of the central group. This building is devoted to the work of the women students especially in Home Making. On the lower floor is a gymnasium adjoining shower and locker rooms. The two upper floors contain class rooms, offices, well equipped sewing and cooking laboratories, a large dining room and dormitory accommodations and a reception room for the women students. This building adjoins the girls' athletic grounds.

**The Print Shop** is a well lighted, one-story frame building situated north of the central group and at the north edge of the campus. This shop is equipped with three late and five older model linotype machines, cylinder and job presses, cutting and stapling machines, a battery of hand type cases and other equipment usually found in a modern printing establishment. In addition to the regular instructional work of the printing classes the student body prints the "Polygram," the student body paper, and the "Journal," the student body annual, here.

**The Boys' Dormitory** is a two-story cement building with room accommodations for forty-five boys. The large fireplace is so located in the recreation room that there may be grouped around it the large rockers and arm chairs, the phonograph, piano and billiard table. In the basement are storage, trunk and laundry rooms and on both the first and second floors are student rooms and showers. Accommodations, reservations, rates, etc., are explained in detail under the heading, "Board and Room."

**The President's Residence.** In close proximity to the dormitory is the President's residence. While there is a faculty member living in the Dormitory who looks after the welfare and conduct of the boys, yet it has proven of distinct advantage to have the home of the President easily accessible to the boys. Both President and Mrs. Crandall take an intense personal interest in the boys' welfare and many of them feel as much at home at the President's home as they do in their own dormitory room. Adjoining the President's home is the campus residence of the head of the Department of Light, Heat and Water and also the residence of the head of the Department of Agriculture.

**Dining Hall.** A short distance north of the Boys' Dormitory is the Cafeteria Dining Hall. This building, 72 by 80 feet, is of cement construction in the shape of a T with the east wing two stories with a full basement. It is completely equipped for boarding all the students.

**Electrical Laboratory.** This building is 76 by 80 feet and is also of concrete. In addition to serving as the laboratory for work in Electrical Engineering it contains the Power Plant and generators for supplying light, heat and power for the entire campus. In this laboratory benches equipped with gas, water and circuit outlets line the sides of the walls where instruments are calibrated, small machines may be inspected and general tests made. A separate bench is used for battery repair work, lead burning, soldering and splicing. The main floor contains a vertical steam engine to which are belted a D. C. generator and a D. C.-A. C. inverter. A small horizontal steam unit is used to drive small capacity generators of various types and makes. A gas unit, a semi-Diesel and a gasoline unit are also used for the same purpose. An assortment of generators and

motors of various sizes and types portably mounted are used for testing purposes. A large motor generator set is used for supplying D. C. and A. C. current at times when steam is not desired. Banks of transformers furnish voltages and capacities of wide range. A mercury arc rectifier and tungars deliver energy for battery charging.

A full line of instruments such as voltmeters, ammeters, wattmeters, and watt hour meters with many duplications provide a wide range of values. Resistance boxes, coils, water rheostats and lamp banks furnish means for regulating currents of any intensity. Arc lamps, batteries, bells, telegraph instruments, telephones and radio equipment allow a wide field for experimentation. The tool room is furnished with means for the quick repair of instruments and apparatus as well as the making of special apparatus, the winding of coils, etc.

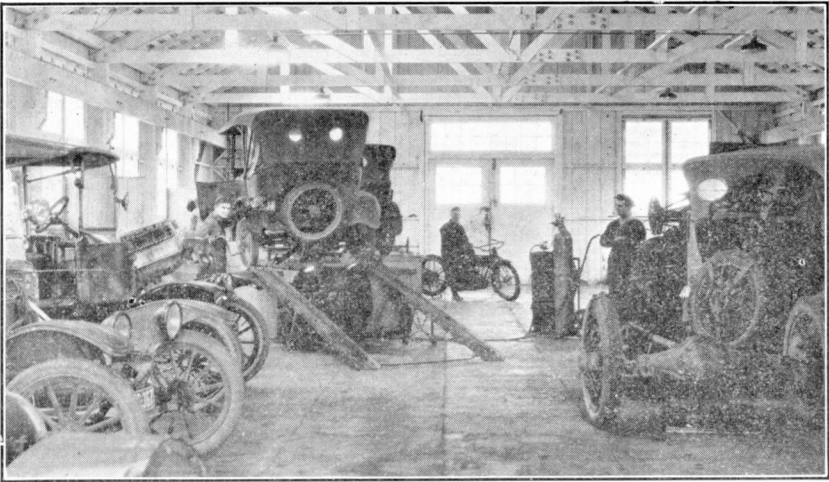
**Mechanics Laboratory.** Instruction in mechanics is given in the same building with the electrical work. Equipment for this consists of two 100-horsepower Sterling boilers, one 100-horsepower steam unit with direct connection to the generator, one 50-horsepower gas engine, four small gas engines, a small fuel oil engine and the usual gas and oil test equipment and laboratory instruments found in a well equipped laboratory.

**Automobile Laboratory.** East of the central group are the shops, all of frame construction. The Automobile Shop, 40 by 100 feet, houses the work in both automobile and tractor repair. This shop is equipped with a large traveling crane for handling all heavy machinery parts to be repaired. It has stands, jacks, work benches and work platforms of the latest approved types. The cylinder boring machine will do reboring work with such accuracy that finished jobs will vary less than one ten-thousandth of an inch. The oxy-acetylene welding equipment is of the latest type.

**The Forge Shop** is 40 by 100 feet not including the locker and wash room of 18 by 36 feet adjoining. Here are located twenty-four individual forges and anvils, a power grinder, power hammer, tire upsetting and tire binding machines, blacksmith shears, drill press and power blower



A CORNER OF SCIENCE HALL



THE AUTO MECHANICS LABORATORY

and exhaust fans. All necessary small tools and equipment to go with this heavy machinery are supplied.

**The Machine Shop,** 40 by 100 feet, like the auto shop is equipped with a powerful traveling crane. It has a tool room 12 by 18 feet where accurate check can be kept on all small tools being used. The larger machinery includes eleven lathes, two shapers, two drill presses, vertical mill, milling machine, tool grinder, planer, power hacksaw and oven type gas furnace. A newly constructed recitation room adjoins the shop.

**Carpentry Shop.** This laboratory houses the equipment for carpentry and woodworking instruction for both engineering and agricultural students. Equipment includes individual motor driven surfacer, jointer, band saw and five turning lathes. There are twenty-one work benches with full equipment of tools for each.

**Surveying** equipment consists of transits of late approved types, several types of levels, chains, rods, axes and miscellaneous equipment needed for surveying instruction.

**Creamery.** This is a two-story cement building 64 by 40 feet with an additional engine room adjoining 22 by 22 feet. The entire lower floor is used for dairy manufacturing purposes. There is a receiving room equipped with steam scalding sterilizer for empty cream cans, three large refrigeration rooms, a testing room and a cheese ripening room in addition to the main manufacturing room which contains two latest model cream ripening vats, two large rotary churns with a capacity for four thousand pounds of butter a day, butter workers and cube cutters, an ice cream making machine and the ice making vats and ammonia pumps.

**The Green Houses** consist of a group of three large glass roofed houses, three lathe hardening houses, a large number of hotbeds and a modern frame office, shop and packing and propagation house.

**The Dairy Barn,** 114 by 53 feet, is a modern and model home for a dairy herd. The front portion is two story and has hay storage capacity sufficient for a herd of twenty-five cows. On the ground floor adjoining

the milking room are the grain bins, office for the farm foreman, separating and sterilizing room. All rooms as well as the two silos adjoining are connected with overhead tracks for feed carriers. Adjoining are exercise lots, calf barn with lots and feed shed.

**Hog Barns and Feeding Houses.** East of the dairy barn and on a slightly sloping acreage are the modern hog barns sufficient in size and number to conveniently care for two hundred hogs at one time. Adjoining each fattening and farrowing pen is a convenient sized exercise lot. Running water is conveniently provided as well as the grain bins and feed storage houses.

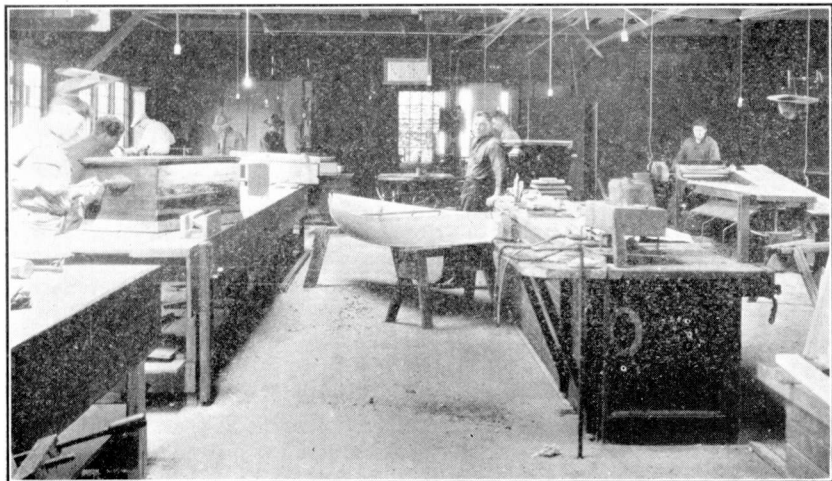
**The Horse Barn,** 35 by 83 feet, is a two-story frame building with a hay loft sufficiently large to care for hay storage for twenty-five animals. Box stalls are conveniently arranged to connect with exercise lots. The harness room as well as a convenient room with hot and cold running water for the barn tender adjoins. In the rear is a modern blacksmith shop equipped to handle the horseshoeing and repair of all farm machinery.

**Poultry Houses** comprise incubator rooms, brooder houses, nesting houses, yards and feed sheds sufficient in size and number to conveniently handle a flock of six hundred laying hens.

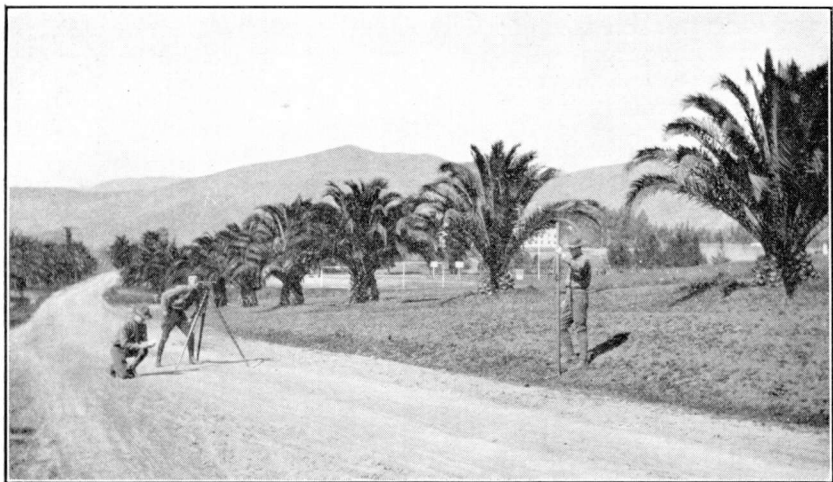
**Other buildings** include granary, two large machine sheds, receiving room 40 by 100 feet for school stores, slaughter house equipped with scales, vats, carriers and cooling room, and three residences for farm help.

## STUDENT ORGANIZATIONS

Student self government is successfully operating on the campus. The administrative and executive body for this is the "Student Affairs Committee," consisting of representatives from the various classes and organizations with faculty members serving in an advisory capacity. Other student organizations comprise Co-operative Store, Co-operative Cafeteria, class organizations, Amapola Club—a social organization of the girl students, Block "P" Club including in its membership all students who win



SOME PRACTICAL CARPENTRY OPERATIONS



ENGINEERS IN THE MAKING

their "P" in any one of the four major interscholastic sports, Mechanics Association, Junior Farm Center—affiliated through membership with the State Farm Bureau, Dormitory Club, School Band, Glee Club, Dramatics.

## STUDENT PUBLICATIONS

During the school year the students interested in journalism work receive practical training through membership on the editorial or managerial staffs of the two student publications. The "Polygram" is the student body newspaper published bi-weekly. The "Journal" is the student body annual published in June. Both these publications are not only written and edited by the students but are printed by them as well in the school print plant.

## STUDENT EXPENSES

### BOARD AND ROOM

Since there is *no tuition* or *no fees* it will be seen that the largest single item of expense is that of the board and room.

**Boys' Dormitory.** The rooms of the boys' dormitory accommodate from one to three students each. All are outside rooms with large windows. All the heavy furniture of the rooms is furnished. This includes beds, mattresses, mattress covers, pillows, chairs, dressers and study tables. The students must furnish for themselves pillow cases, sheets, blankets, towels, soap and individual toilet articles. Rugs, drapes, laundry bags and similar personal items may be furnished by the students to suit their individual desires.

Dormitory rooms are assigned in the order in which applications are received. Changes in assignments may be made on personal application by the student to the faculty member in charge of the hall. A deposit of two dollars and fifty cents is required to reserve a room. At the close of the year the deposit is returned less deductions for damage or unnecessary

abuse to the room or furniture. The monthly room rent of seven dollars includes all room expenses as well as the laundry of all room linen.

**Girls' Residence.** Girls whose homes are not in San Luis Obispo will be required to live in a home selected and approved by the President of the school and will be under the direct supervision of the preceptress appointed by the President. The items to be furnished and the charges correspond with that of the boys' dormitory above.

**Cafeteria.** At the students' co-operative cafeteria both boys and girls take their meals which are furnished at the flat rate of twenty-seven dollars a month. For those students who live near San Luis Obispo and desire to spend each week end at home a rate of twenty-two dollars per month is made.

### PERSONAL EXPENSES

Because of personal habits, degrees of thrift, abilities to discriminate in values, etc., the personal expenses of students vary so greatly it is not practicable to attempt to tabulate the personal expenses. Each boy must purchase a military uniform. For this reason it is not necessary that he supply himself with the usual extra suit before leaving home. He must also supply himself with a gymnasium suit and shoes. For the sake of economy these items should be purchased after reaching school. Girls taking the Home Making course are required to use the regulation white aprons which are made by the girls as a part of the sewing instruction. The gymnasium suits required consist of black bloomers, which are made by the girls in the sewing classes, black tennis shoes and stockings and a white middy which may be purchased or made by the girls in the sewing classes here.

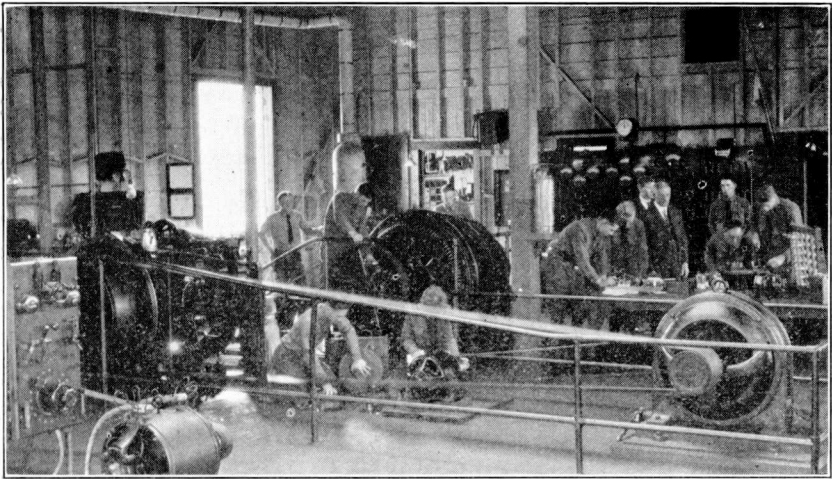
### COST OF A YEAR IN SCHOOL

For the necessary expenses, exclusive of the three personal items of carfare, clothing and amusements, the average student need not expend more than \$350.00 per year. In the tabulation of necessary expenses given



A CLASS IN THE BIOLOGY LABORATORY





TESTING ELECTRICAL MACHINES

below the board is shown for eight months only because of the vacation periods during which most of the students spend at home. The cost of the military uniform for boys (\$16.00), the gymnasium suits and shoes (\$6.00), and the Home Making uniform for girls (\$3.00) should be added. These items, however, should serve for more than one year. Personal expenses such as clothing, laundry, amusements, class and society dues, etc., vary greatly with the individual.

Text books and class supplies.....	\$30.00
Student Body fees.....	7.00
Board (eight months).....	216.00
Room rent (nine months).....	63.00

It should be noticed that there is no tuition nor any laboratory fees charged. The initial outlay for the average student at registration time is approximately \$85.00. This includes the first month's board and room in advance, books and class supplies for the first half year, student body fee for the entire year and a thirty dollar deposit (refundable at the end of the year or applied on the last month's board and room account). In addition, boys coming for the first time should be prepared to purchase the uniform in advance.

## SELF SUPPORT

While opportunities for students to earn money during the school year are numerous, it is not advisable for students to enter school without funds in reserve to carry them for at least the first half year without depending on earning at school. During the first half year they should be able to so acquaint themselves with local conditions that they will know best where and how to secure the most lucrative position.

All students in agriculture may depend upon being assigned to projects which will net them cash returns varying from ten to thirty or forty dollars per month. In order to secure one of these assignments it is suggested that each prospective student in agriculture mail his request to The

Head of the Agricultural Department, California Polytechnic School, San Luis Obispo.

Work, other than the agricultural projects, is furnished a number of students who wish to work for board and room at the cafeteria, do janitor work at the various buildings or work for private families in town. With the exception of the project work for students in agriculture it is not satisfactory to attempt to secure work by correspondence.

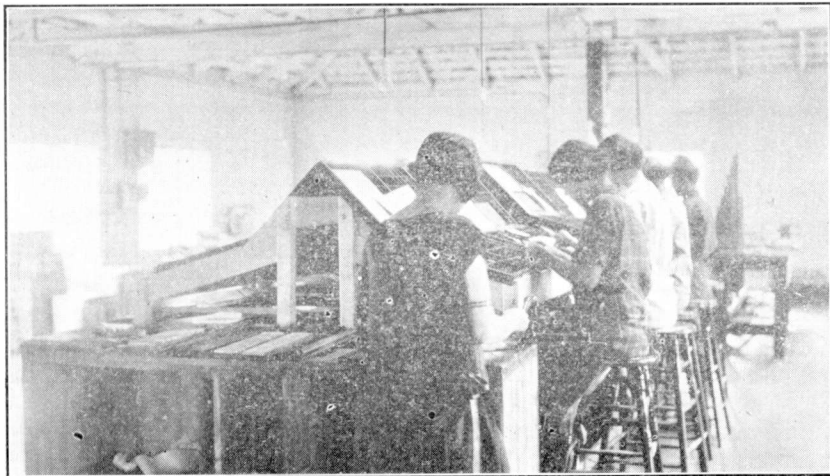
### LOAN FUND FOR PROJECT WORK

In the Department of Agriaculture students are assigned projects or problems of a practical nature and are permitted to retain for themselves all the money they are able to earn in this way. These projects include poultry raising, hog raising, gardening, dairying, etc. In case any student desiring to take up one of these projects has not the funds available for the original financing of it, he may depend upon being able to borrow all necessary funds from a local bank. This bank carries all such loans that are approved by the agricultural faculty.

### ENTRANCE REQUIREMENTS

Any boy or girl of good character and at least average ability, who has graduated from an eighth grade or is at least sixteen years of age, will be admitted to this institution. The placing of the student in the course will be determined by his experience, training and ability.

High school graduates and students who have high school units will be given credit for the same so far as they correspond to the courses offered in this school. Students, whose previous experience and education have failed to qualify them to carry the regular work, will be assigned at the discretion of the faculty to the course for special students as shown below.



A SCENE IN THE PRINT SHOP

## Course for Special Students

	Class	Practice
English I .....	5	0
Special Mathematics .....	5	0
Occupational Civics .....	5	0
Study, Library .....	0	5
Physical Education .....	0	4
Assembly .....	0	1
Elective—agriculture, carpentry, machine shop, etc.....	0	20
Total periods per week.....	15	30

## AGRICULTURAL COURSE

Agricultural instruction at the California Polytechnic School requires half the student's time on the farm for field practices and project work, and half his time in the classroom and library studying the reasons and making plans for carrying on his farm practices.

The entire ranch of one thousand acres is given over to student projects. The student is started in his agricultural work learning how to use all farm machinery, and handle livestock. He then leases land on the crop-share basis, or conducts a project of poultry or livestock on a similar plan, thus he is a farmer while going to school. The majority of the boys are paying their own way by their projects, while others will leave school with a start in purebred livestock or poultry in addition to a good education.

<i>First Year</i>			<i>Second Year</i>		
	Class	Practice		Class	Practice
English I .....	5	0	English II .....	5	0
Occupational civics .....	5	0	Vocational Mathematics II ..	5	0
Study .....	0	5	Physical education .....	0	4
Physical education .....	0	4	Assembly .....	0	1
Assembly .....	0	1	Study .....	0	5
Agriculture I—mathematics, field and practice with project, study and supervision..	5	12	Agriculture II with project, study and supervision .....	5	12
Farm Mechanics—carpentry, concrete, building, harness and rope work .....	0	8	Farm Mechanics—forge, cold metal, soldering, repair farm machinery .....	0	8
Total periods per week..	15	30	Total periods per week ...	15	30

<i>Third Year</i>			<i>Fourth Year</i>		
	Class	Practice		Class	Practice
English III .....	5	0	U. S. History and civics.....	5	0
Chemistry or applied science .	5	4	Elective—physics or math. ...	5	0
Study .....	0	5	Study .....	0	5
Physical education .....	0	4	Physical Education .....	0	4
Assembly .....	0	1	Assembly .....	0	1
Agriculture III with project, study and supervision ....	5	8	Agriculture IV with project, study and supervision .....	5	8
Farm Mechanics—farm power, stationary engines, electricity	0	8	Farm Mechanics—auto, tractor and surveying .....	0	12
Total periods per week ..	15	30	Total periods per week ....	15	30

*Agriculture I.* This course is a general presentation of agriculture and farm operations. It is the prospective farmer's apprenticeship year. In his classroom and library study he will familiarize himself with the larger and more general principles of good agricultural practices along all lines. In his practice and project work he will be given experience to develop skill

in farm operations, handling horses and machinery, care of the various farm animals, also care of farm equipment.

*Agriculture II.* The course is divided into short units of twelve weeks each. This enables each student to obtain concrete, authentic information on many phases of farming. It is especially beneficial to the boy taking two or more subjects. It gives him the idea of diversified farming, the proper labor balance in the growing of various crops and the proper labor income.

The work is divided into six short unit courses each running for twelve weeks.

1. Winter vegetables—preparing seed bed, cultivating, harvesting and marketing.

2. Small fruits—propagation, culture and management.

3. Orchard practices—includes pruning, spraying, budding, grafting, nursery stock.

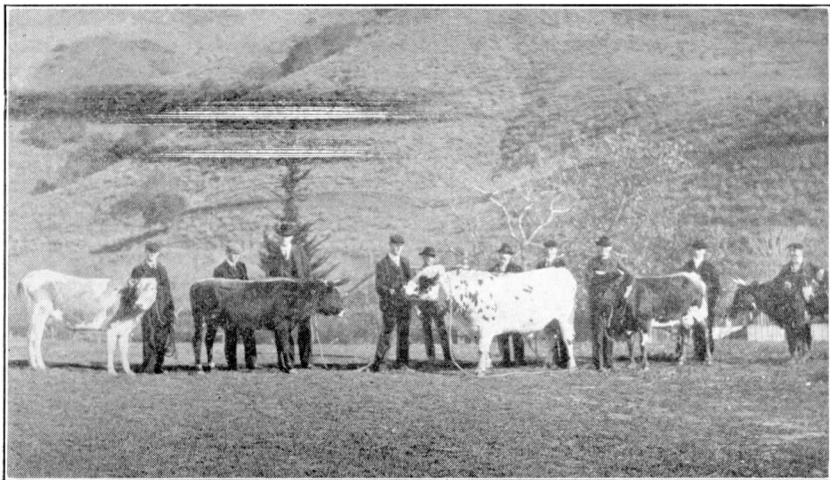
4. Dairy and beef animals—most common breeds of both on the school farm.

5. Hogs, sheep, horses—good specimens of each class and various breeds.

6. Poultry—flocks of standard breeds for study and practice.

The school is most ideally situated for the growing of winter vegetables and one of the strongest courses is rightly the growing of winter vegetables, especially peas. .

*Applied Science.* This course is designed especially for students in agriculture as contrasted with chemistry for those who wish to enter college. The course is most practical as well as scientific. The fundamental elements of the course will be taken from Botany, Biology, Bacteriology and Chemistry. The applications will be innumerable. All the diseases and pests that come up in both plant and animal care for identification and control and the preparation of sprays, dips and other remedies will alone provide a rich field.



SOME PRIZE WINNERS ON THE FARM

*Agriculture III.* The third year copies the plan of the second and carries the student into more advanced agriculture. Again six short unit courses each of twelve weeks are offered.

1. Feed and feeding—applied to all livestock and poultry carried as projects.

2. Veterinary science—first aid and treatment of common ailments.

3. Creamery manufacture—practice given in plant on campus, producing some 3,000 pounds daily.

4. Deciduous fruits—advanced work along lines started in Agriculture II on school orchards.

5. Citrus fruits—same general plan as deciduous.

6. Landscape gardening—fine opportunity with green houses, lath house and propagating buildings.

Situated as we are at this school with no winter frosts, winter flowers and landscape gardening are attractive courses.

*Agriculture IV.* The fourth year student's time is spent almost entirely with farm management and farm economics problems. The running of the entire farm is in the hands of the fourth-year students. The student starts as an apprentice, then leases or is a tenant-farmer during his second and third year, and the fourth year he takes the place of a land owner and manager.

*Farm Mechanics.* The farm mechanic courses which run through the entire four years are complete in every detail. For students in the Special Course or the Four Year Course the many phases of mechanics as applied to the farm will be presented in their logical sequence. The shop and laboratory courses include instruction in carpentry, concrete, harness and rope work, forge, soldering, repair of farm machines, farm power, stationary engines, electricity, auto repair, tractor repair and operation, surveying, etc.

## MECHANICS COURSE

The Engineering Mechanics Department offers a general course and a number of specialized courses. In all of these it gives a thorough training in the branches of mechanics with which the courses deal. Its immediate purpose is to give the student the trade skill to fit him for the job in which he is to earn his living. At the same time it endeavors to supply a sufficiently broad foundation of knowledge to enable him to rise in his trade as opportunity may offer.

The graduates of this course do not obtain the thorough training in theory and technology which college graduates receive, but they do obtain a much better practical training. In addition to providing practical training, all courses which lead to graduation provide a good education based upon the requirements of the State Board of Education for graduation from high schools.

The general course is intended to meet the needs of those students who do not know in what course they wish to specialize. As soon as their particular aptitude is determined they can be transferred to a special course. It is of particular advantage for one who wishes to work into a position as minor executive in an industrial concern in which knowledge of mechanics is essential. The course provides a training in at least two shops, a good grounding in science, and not only theoretical knowledge but also practical experience in gas and steam engines, electricity, surveying and hydraulics. The course is as follows:

## GENERAL COURSE IN MECHANICS

<i>First Year</i>			<i>Second Year</i>		
	Class	Prac- tice		Class	Prac- tice
English II .....	5	0	English III .....	5	0
Applied Science .....	5	0	Physics .....	4	4
Algebra or Elem. Math. (de- pending on previous work) ..	5	0	Geometry .....	5	0
Mechanical Drawing I .....	0	8	Mechanical Drawing II .....	0	6
Study .....	0	5	Study .....	0	5
Shop (forge, 1st semester; car- pentry, 2nd semester) .....	0	9	Machine Shop I .....	0	8
Physical Education .....	0	4	Physical Education .....	0	4
Assembly .....	0	1	Assembly .....	0	1
Glee Club (elective) .....	0	2	Glee Club (elective) .....	0	2
Consultation with counselor ..	0	1	Consultation with counselor ..	0	1
Total periods per week ....	15	30	Total periods per week .....	14	31

<i>Third Year</i>			<i>Fourth Year</i>		
	Class	Prac- tice		Class	Prac- tice
Chemistry .....	4	4	Advanced Algebra (1st s'm'st'r) ..	5	0
Gas and Steam Engines .....	3	4	Hydraulics (2nd semester, 3 class and 4 practice pds.) .....	0	0
Electric Shop V .....	5	4	U. S. History and Civics .....	5	0
Solid Geometry and Trigo- nometry .....	5	0	Surveying .....	1	4
Mechanical Drawing III .....	0	4	Shop Sketching and Math. ....	3	2
Study .....	0	6	Study .....	0	5
Physical Education .....	0	4	Shop Work, elective (opportuni- ty to specialize) .....	0	14
Assembly .....	0	1	Physical Education .....	0	4
Consultation with counselor ....	0	1	Assembly .....	0	1
Total periods per week ....	17	28	Consultation with counselor .....	0	1
			Total periods per week .....	14	31

*Mechanics I.* This is an elementary course in the study of the theory and practice connected with gas and steam engines. Among the subjects covered are: types of engines, indicator cards, mechanical and thermal efficiencies, care and trouble finding, and construction and care of boilers.

*Elementary Hydraulics.* This is a one semester course in the fundamentals of the properties of water in pipes and ditches, at rest and in motion. It makes a study of problems dealing with friction loss, pipe sizes, pump efficiencies and cost of pumping. Three periods of class work and four periods of laboratory work are given each week.

*Surveying.* A practical course in elementary surveying includes leveling, profiling, mapping, re-running old surveys, locating lost corners, surveying and computing area and leveling for irrigation. The student becomes familiar with the careful handling and adjustment of the transit and level.

*Blue Print Reading.* A study and analysis of machine shop blue prints. The student is taught to pick out parts of a complicated drawing so that he may make any part of a machine from the prints of the whole. This course is given in connection with the machine shop work.

*Shop Sketching and Mathematics.* This is a study of design problems that will bring out the student's originality in whatever vocation he has chosen. The sketches are made freehand in a readable manner. The mathematics studied is that which applies directly to his vocation.

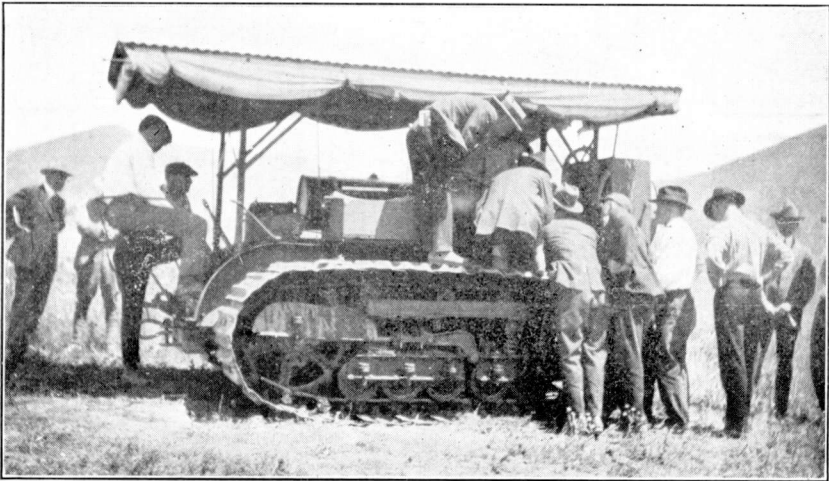
*Forge Shop.* A one year course in forge includes practical work in both iron and steel forging with studies in the properties, manufacture, and heat treatment of both iron and steel. The shop work includes the common operations in forging, such as drawing, bending, welding, tempering, tool-making and general repair work for farm and shop. The student has an opportunity to express his originality in his own design problems.

*Carpenter Shop I.* A practical course in bench and machine work. The course is so planned that the student will obtain practice in making the common joints used in carpentry and cabinet making. Work is given on the use and care of hand tools. Study of the various kinds of lumber and the uses for which they are particularly adapted is also made. Much practical work is given through repair jobs about the farm and on the school buildings.

*Carpenter Shop II.* This continues the work given in Course I and takes up the repair and adjustments of power machines, saw filing, work with steel squares as applied to roofing, framing, plan reading and the estimating of bills of material for small buildings and repair work. It also includes lathe work and furniture making.

*Carpenter Shop III.* Advanced work in cabinet making, wood finishing and polishing. Problems are given in design in order to bring out the originality of the student and these problems are worked out in the shops. Elementary work in pattern making and corebox making with explanations of the shrinkage rule is also given.

In addition to the general course in Mechanics, special courses are offered for machinists, auto mechanics, electricians, and draftsmen. These special courses are so arranged that the related work applies directly to the shop work. In the outline given below the shop work is arranged in groups according to the vocation chosen. Group I is for machinists, Group II for electricians, Group III for auto mechanics, Group IV for draftsmen.



A CLASS IN TRACTOR REPAIR AND OPERATION



# SPECIAL COURSE IN MECHANICS

## First Year

	Class	Prac- tice
All Groups:		
Vocational mathematics I ..	5	0
English II .....	5	0
Mechanical Drawing I.....	0	8
Applied science .....	5	0
Physical education .....	0	4
Assembly .....	0	1
Study .....	0	3
Glee Club (elective) .....	0	2
Conference with counselor .	0	1
And—		
Group I:		
Forge shop 1st sem., machine		
shop 2nd sem. ....	0	11
Or—		
Group II:		
Forge shop .....	0	4
Electric shop .....	0	11
Or—		
Group III:		
Forge shop 1st sem., machine		
shop 2nd sem. ....	0	11
Or—		
Group IV:		
Carpentry shop 1st sem.,		
forge 2nd sem. ....	0	11
Total periods per week ..	15	30

## Third Year

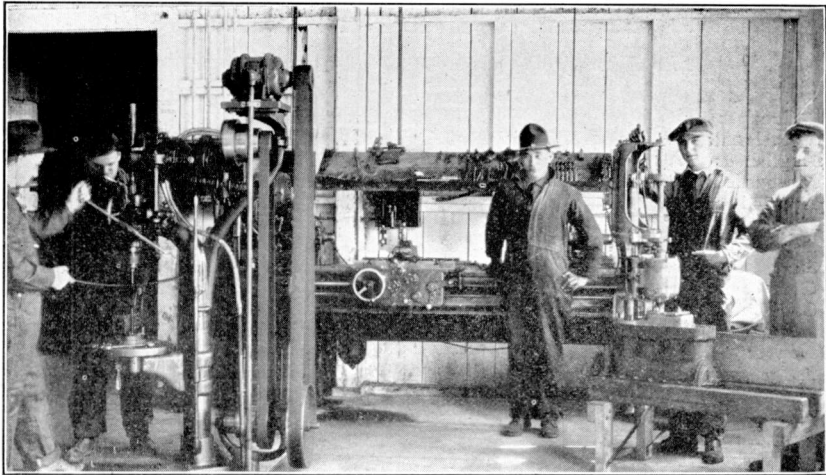
	Class	Prac- tice
All Groups:		
Physical education .....	0	4
Assembly .....	0	1
Study .....	0	3
Conference with counselor ..	0	1
And—		
Group I:		
Chemistry .....	4	4
Electric shop V .....	5	4
Machine shop III .....	0	19
Or—		
Group II:		
Chemistry .....	4	4
Electric shop III .....	5	4
Mechanics I .....	3	4
Machine shop I .....	0	12
Or—		
Group III:		
Physics .....	4	4
Auto shop II .....	0	12
Auto shop III .....	5	0
Machine shop III .....	0	11
Or—		
Group IV:		
Mechanical drawing III ..	0	12
Machine shop I .....	0	8
Electric shop V .....	5	4
Mechanics 1 .....	3	4
Total periods per week .....	—	—

## Second Year

	Class	Prac- tice
All Groups:		
Vocational Mathematics II ..	5	0
English III .....	5	0
Physical education .....	0	4
Assembly .....	0	1
Study .....	0	3
Glee Club .....	0	2
Conference with counselor ..	0	1
And—		
Group I:		
Blue-print reading .....	0	2
Machine shop II .....	0	14
Physics .....	4	4
Or—		
Group II:		
Electric shop II .....	5	4
Electrical Drawing I .....	0	6
Physics .....	4	4
Study .....	0	1
Or—		
Group III:		
Auto shop I .....	5	0
Machine shop II .....	0	19
Or—		
Group IV:		
Physics .....	4	4
Mechanical drawing II .....	0	8
Total periods per week ..	15	30

## Fourth Year

	Class	Prac- tice
All Groups:		
U. S. History and civics .....	5	0
Physical education .....	0	4
Assembly .....	0	1
Study .....	0	1
And—		
Machine shop IV .....	0	21
Shop sketching and		
mathematics .....	3	2
Elective .....	0	5
Or—		
Group II:		
Electric shop IV .....	5	8
Shop sketching and math. ...	3	2
Electric shop V (surveying		
optional) .....	0	13
Or—		
Group III:		
Auto shop IV .....	0	21
Auto shop V .....	5	0
Auto shop VI .....	5	0
Or—		
Group IV:		
Mechanical drawing IV ....	0	12
Machine shop II .....	0	8
Elective .....	0	10
Total periods per week .....	—	—



SHOPS ARE EQUIPPED WITH THE BEST OF MACHINES

## GROUP I

*Machine Shop I.* In this group bench work is first taken up. The student begins with the chipping, care, tempering and grinding of chisels; the filing and study of different kinds of files and the polishing of finished surfaces. Class work is given in blue print reading, the use of the square, scale, protractor, dividers, surface gauge and center punch in laying out work. Machine work is begun on the drill press, taking up details in the care and operation of the drill press.

*Machine Shop II.* This begins with the simple turning on a lathe. As a student develops skill in handling the machine the work assigned him becomes more difficult until he has completed all of the work commonly done on a lathe including both straight and taper turning, external and internal, with the thread cutting on each.

*Machine Shop III.* A continuation of course II with the addition of planer and shaper work is taken up with a study of each machine and the kind of work done on each. The student begins with plain surface finishing and as his skill develops takes up more complicated work such as slots, T and V dovetail joints, keyseat cutting and rack cutting.

*Machine Shop IV.* This course deals largely with operations of the milling machines and automatic tool grinders, with practice in general repair work. The student is also given an opportunity to obtain some experience in foremanship.

## GROUP II

*Electric Shop I.* Elementary electricity and magnetism. This course is for beginners and those whose electrical experience has been limited. The subjects dealt with are as follows: fundamental ideas of simple circuits, magnetism, electro magnetism, electromagnet induction, electric instruments, measurements, heating and lighting circuits and appliances, telephones, door bells, and systems of signalling, induction coils, ignition circuits and storage batteries.

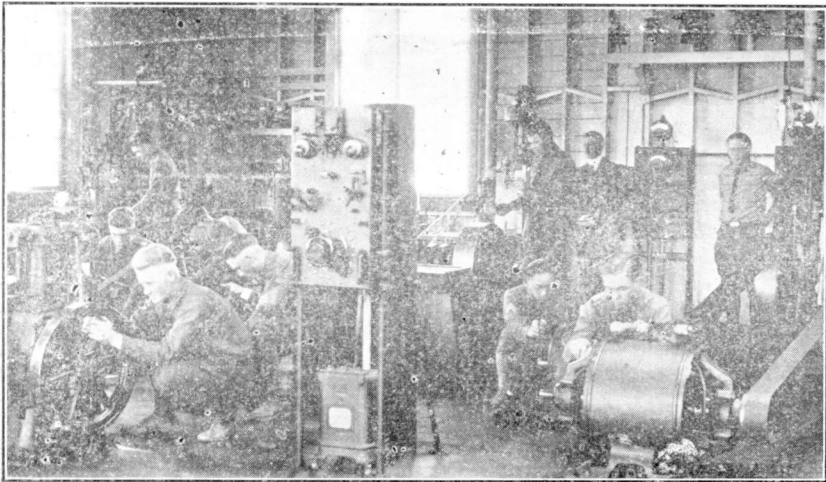
*Electric Shop II.* Direct current machinery. This is a continuation of the previous course in which the theory and its application are devoted to different types of generators, motors and switch boards, regulating and control devices, tests and studies of machine characteristics, operation and distribution of D. C. power and lighting.

*Electric Shop III.* Alternating current machinery. In this are studied the practical operation of alternators, single and three phase induction motors, transformers, mercury arc rectifiers, tungars, arc welding, arc lighting, regulating and protective devices, remote control, power factor, synchronous motors, power plant switching equipment, transmission and distribution problems.

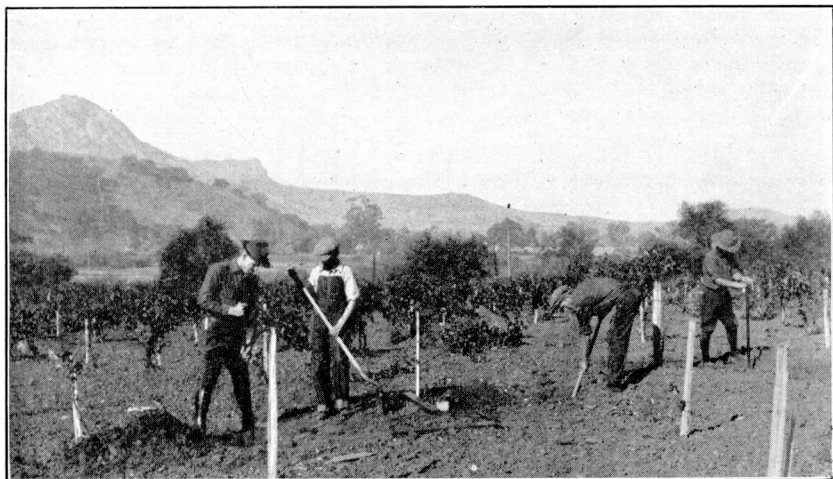
*Electric Shop IV.* A general course in project work in which a student takes up a particular project in designing and constructing some machine device or appliance with the object of obtaining practical experience. Conduit wiring and switchboard work, repairs to equipment, and rearrangement of present power plant units, furnish examples and opportunities for learning the latest developments in the practical field of electricity.

*Electric Shop V.* The work begins with magnetism and simple circuits and goes as far as the induction motor with its controls and protective devices. This course is intended for the student in other vocations who should have a knowledge of electrical equipment to assist him in his vocation. Agricultural students will be accepted in this course if they have had physics.

*Electric Shop VI.* A course in the electricity of the home, especially arranged for students in home making. Studies and tests are made in the operation costs and the efficiency of different types of electric irons, toasters, percolators, waffle irons, chafing dishes, sewing machines, washing machines, ranges, water heaters and other home appliances. Instruction is given in methods of interior lighting, decorative effects, interpretation of lighting power bills, proper use of fuses, fire risks and work in first aid.



A SCENE IN THE ELECTRICAL AND MECHANICS LABORATORY



A PORTION OF THE SCHOOL VINEYARD

### GROUP III

*Auto Shop I.* The first course in automobile work consists in book work, recitations, lectures and demonstrations in general automobile work. In this course a student becomes familiar with the different parts of the automobile before beginning his laboratory work in the shop.

*Auto Shop II.* This includes class and laboratory work in the auto shop consisting of a complete set of repair jobs to be done on the regular shop machines and equipment. These repair jobs are so arranged as to give the student the theory and practice in performing the common repair work met in the average repair shop. The student is advanced to the more difficult jobs as rapidly as he demonstrates his ability to do the work.

*Auto Shop III.* This course considers the application of electricity to the automobile with a study of auto electric equipment, wiring, diagrams, different circuits and ignition systems and includes lectures and practice in locating electric and ignition troubles.

*Auto Shop IV.* Special commercial repair work and experience in cost keeping and shop management. This course is arranged to give the student training in the line of work that he needs the most. All students are given practice in the use of acetylene torch.

*Auto Shop V.* Special work in the class in garage management. Shop accounting, shop records, shop cards, stock invoicing and general shop planning.

*Auto Shop VI.* A continuation of Auto Shop III with more practice in sketching and diagram drawing and related mathematical computations. An effort is made to bring out the student's originality in the sketches made in this course.

*Auto Shop VII.* This is a general course intended for students not specializing in auto mechanics. The work is of such a nature that the student will become familiar with the fundamentals of the automobile and be able to make minor repairs on his own car.

## GROUP IV

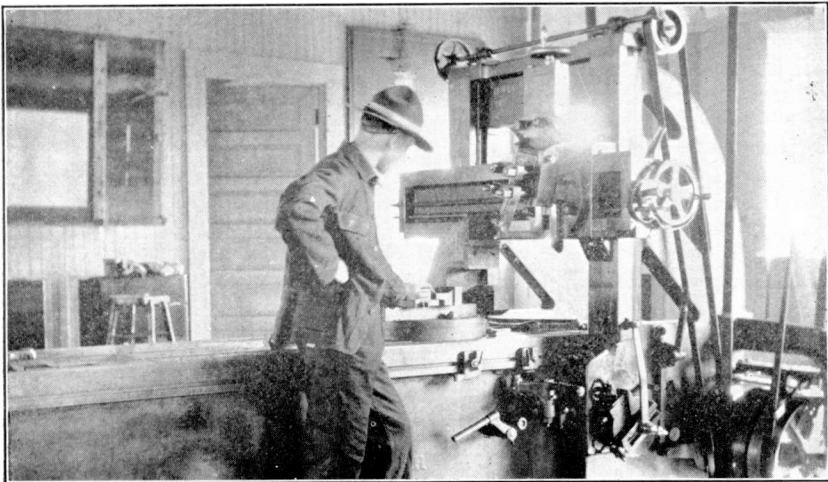
*Mechanical Drawing I.* Elementary principles. This is a course for beginners in which the use of drawing instruments is taught by following simple exercises in line, lettering, circles and curves. Plans of geometrical constructions are followed by the pre-view method of showing simple objects. A selection of graded exercises brings out the major principles used in all general mechanical drawings. These are followed by the assignment of simple machine parts or other objects which are scaled and drawn to some convenient scale.

*Mechanical Drawing II.* Machine design. A continuation of the above course for students majoring in mechanics and machine shop. It contains more advanced work in geometrical problems such as conic section, general and detail drawings of machines and cross sections. This is followed by the assignment of machines or machine parts to be measured and drawn to scale.

*Mechanical Drawing III.* A continuation of Mechanical Drawing II. For students and mechanics who wish to become mechanical draughtsmen. Special attention is given to see that the student is assigned work in which he most needs practice.

*Mechanical Drawing IV.* A more advanced course in original design of machines and shop arrangement. The problems are assigned to bring out the student's originality. Class work will be given in strength of materials.

*Architectural Drawing I.* Exercises in conventional symbols and diagrams as applied to simple carpentry work and wood turning. The design and methods of construction of simple objects such as boxes, crates, tanks, desks, benches, and other common objects with estimates of amounts and costs of materials furnish opportunities for the student to master problems in wood working. This course is intended for students who are majoring in carpentry, agriculture or home making.



A CORNER OF THE WELL EQUIPPED MACHINE SHOP



A CORNER OF THE COOKING LABORATORY

*Architectural Drawing II.* Farm architecture. This is a continuation of the preceding course. Students of agriculture are given problems in designing of farm buildings; students of home making, design of bungalows and their equipment, changes in the design of existing buildings, interior arrangement, lighting, heating, and sanitary arrangement.

*Electrical Drawing I.* An elementary course for regular students in electricity who have completed Mechanical Drawing I. This course consists of simple and conventional diagrams supplemented by drawing of circuits used in shop work and class room problems. Bell systems, telegraph, telephone, burglar alarms and other signalling systems, automobile ignition circuits, simple lighting and power circuits, especially those using direct current, supply material for work.

*Electrical Drawing II.* An advanced course for those who wish to become electrical draughtsmen or who expect to take advanced work in electricity. Problems dealing with alternating currents such as polyphase circuits and vector diagrams, wiring diagrams of alternators, motors, control devices, automatic and regulating devices, rectifiers, transformers and switchboard panels are studied.

*Electrical Drawing III.* Project work. This work is taken in connection with electric projects in which the student makes his drawings and calculations in the draughting room. The projects usually require considerable study of catalogs, price lists, and other sources for furnishing estimates of costs and of materials.

## HOME MAKING COURSE

The purpose of the Home Making Course is primarily to fit girls for home life. The course is founded in the belief that the making of a home and its proper management entail demands that are all too seldom recognized: demands for general education, for a knowledge of the sciences underlying good housekeeping, for a training in habits of good housewifery and artistic self-expression.

The course also serves as admirable preparatory training for girls who wish to fit themselves for nursing. In fact, the training period is materially shortened for girls who have graduated from this course. It serves, too, as a preparatory course for the university and for teachers' colleges, although in this case a few modifications are recommended.

Throughout the four years of work a consistent effort is made to keep the girls close to natural conditions. They are trained in economy in both the purchase and use of materials, whether for dress, food, furnishings or adornment. They are taught to serve meals on a limited amount of money, to adapt themselves to the needs of families of various types, which may include infants or invalids, and to learn the principles of table service. They are trained in the wise planning and the appropriate furnishings of a house, whether the amount to be expended is large or small. They learn the responsibility of the woman to spend the family income wisely is just as great as is that of the man to provide a sum sufficient for its proper maintenance.

<i>First Year</i>			<i>Second Year</i>		
	Class	Prac- tice		Class	Prac- tice
English II .....	5	0	History II .....	5	0
History I .....	5	0	Biology .....	3	4
Household arithmetic .....	5	0	Study of foods .....	3	0
Hygiene and first aid .....	3	2	Cooking I .....	0	8
Music .....	2	2	Millinery .....	0	5
Sewing I .....	0	10	Public speaking .....	1	2
Physical education .....	0	4	Music .....	0	2
Study .....	0	5	Physical education.....	0	4
Assembly .....	0	1	Study .....	0	6
Conference with counselor ..	0	1	Assembly .....	0	1
	—	—	Conference with counselor ....	0	1
Total periods per week ..	20	25	Total periods per week ...	12	33
<i>Third Year</i>			<i>Fourth Year</i>		
	Class	Prac- tice		Class	Prac- tice
English III .....	5	0	U. S. History and civics .....	5	0
Household chemistry .....	3	2	Household physics .....	3	2
Elective .....	5	0	Dietetics, 1st sem.; gardening		
Home-management .....	3	5	2nd sem. ....	5	(5)
Public speaking .....	1	2	Cooking II .....	0	7
Music .....	0	2	Elective .....	5	0
Sewing II .....	0	6	Home management .....	3	4
Physical education .....	0	4	Physical education .....	0	4
Study .....	0	5	Study .....	0	5
Assembly .....	0	1	Assembly .....	0	1
Conference with counselor ..	0	1	Confererence with counselor ...	0	1
	—	—		—	—
Total periods per week ..	17	28	Total periods per week ..	21	24

*Household Arithmetic.* This is a course in arithmetical problems which apply to the work of the housekeeper. It includes practical work in the computation of problems concerned with materials for clothing, hats and food preparation, and the advanced problems arising in the care of a home. Each girl is required to make a personal budget and to study the wise budgeting of a family income. The students are encouraged to become proficient in rapid calculation of the problems that arise in every-day work in the laboratory and in the home.

*Hygiene and First Aid.* This is an elementary course in the care of the body under normal conditions and its temporary treatment in emergencies.



*Millinery.* A course in the making, trimming and renovating of hats. The purpose of the course is not to train girls for a trade millinery, but to teach them enough of the art to assist them in making and renovating their own hats.

*Study of Foods.* This involves the study of carbohydrate foods, fats and proteids; their source, composition, cookery, digestion and economic value.

*Sewing I.* Plain sewing, including the fundamental principles of hand and machine sewing, as involved in the making of undergarments and of simple dresses. Each student is required to make the necessary outfits for gymnasium and kitchen, undergarments and two simple dresses. Instruction is also given in patching and mending. An elementary study of textiles is also made. Estimates of the expense of finished garments are required in all sewing courses.

*Sewing II.* This is a more advanced course than Sewing I and includes the making of dresses involving more difficult work and the making of linen accessories for use in the household.

*Cooking I.* A laboratory course in conjunction with the Study of Foods. It includes practical instruction in the preparation and cooking of cereals, vegetables, milk and cheese, eggs, fish and meat, and bread; a study of ranges, fuels, cleansing agents and kitchen appliances.

*Cooking II.* The second year of cooking laboratory work includes the preservation of fruits and other foods, the making of pastry, cake and desserts; the planning and serving of meals, including the careful calculation of the cost of the meals.

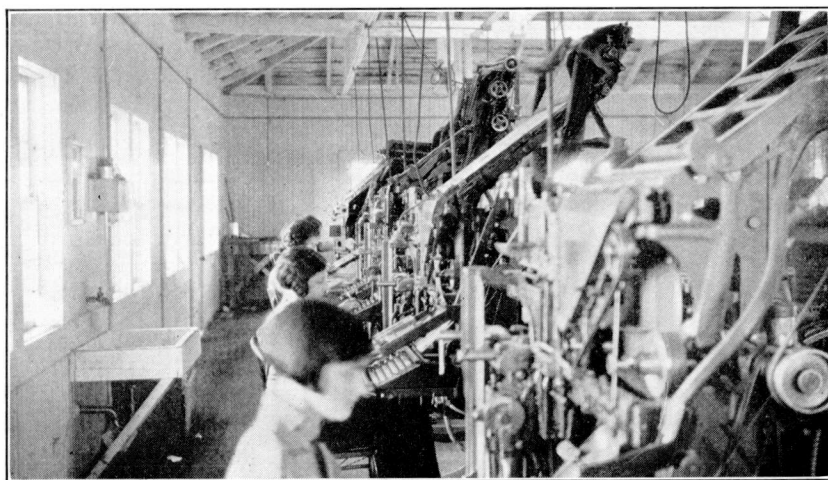
*Household Chemistry.* The work of the first semester in Household Chemistry deals with organic chemistry including elementary chemical theory and calculation. The second semester deals with the chemistry of the household and includes such common substances as soaps, cleaning compounds, and dyes, baking powders, starches, and other common articles of household use.

*Household Physics.* This is a study of the principles of physics as applied to the problems of the home. It includes a study of the fundamentals of electricity as used for heating and lighting purposes, the operation of door bells, etc., a study of the principles of fire extinguishers, ice cream freezers and the operation of the various types of ventilating and heating systems.

*Home Management.* This work is given in a two year course and is intended to cover all the essential operations of the home-maker, apart from those studied in other courses. It includes home laundering and dry cleaning, a study of systematic house keeping, buying and keeping accounts, water supply, disposal of waste, appropriate household practice including such operations as sweeping, dusting, cleaning, bed making, table setting, the planning of the house with reference to sanitation, convenience, economy and beauty, and the study of appropriate furnishings.

*Dietetics.* This course reviews the physiology of digestion and makes a careful study of dietaries for adults, children and invalids. It also studies the elements of home nursing.

*Home Gardening.* This is a practical course of one semester which consists of general study of the propagation of plants by cutting, layering, budding, grafting and by seeds. The principles of floriculture and landscape gardening are also studied and practical work is given in the green-houses, hot beds, and cold frames and on the school grounds.



A CLASS IN LINOTYPE OPERATION

## PRINTING COURSE

The California Polytechnic School is now offering a course in printing. This has been introduced because of the demand all over the country for well trained printers. For the boy or girl who enters the school at the age of sixteen with this vocation in view a four year course is recommended. An older student, who has the necessary educational background, is good in spelling and has the necessary qualifications of temperament and character should be able to complete a course in two years. The work is not adapted to one who is sluggish in thought or movement. The printer is keen in thought and quick in action and observant in details. The compensation of printers is good and the demand for work is steady. The foundation or two year course is one recommended by the United Typothetae. The print shop equipment is complete and includes three linotype machines. The full course embraces a comprehensive study of the principles of elementary and advanced hand composition, linotype composition, imposition and press work.

<i>First Year</i>		<i>Second Year</i>	
	Periods		Periods
English Composition .....	5	U. S. History .....	5
Physical Education .....	4	Physical Education .....	4
Assembly .....	1	Assembly .....	1
Print shop work .....	34	Print shop .....	34
Consultation with counselor.....	1	Consultation with counselor ....	1
Total periods per week .....		Total periods per week ....	
45		45	

*Elementary Composition.* This embraces principles of typesetting, proofing composition, correcting proofs, distribution, style, care of materials.

*Advanced Composition.* This course includes plain book composition, makeup, title pages, special book features, display composition, advertising composition, job composition and proof reading.

**Linotype Composition.** This course embraces keyboard practice, mechanical details, care of machines, care of metal, straight matter composition and intricate composition.

**Imposition or Stone Work.** This embraces the elements of lockup, making proofs and corrections on stone, laying out forms.

**Platen Press Work.** This includes oiling and cleaning, feeding blank stock, then live jobs, washing press, press preparation, care of rollers, grades of paper and sizes, paper handling, cutting stock.

**Binding and Finishing.** This course includes work in folding, wire stitching, padding and trimming.

## THE ACADEMIC DEPARTMENT

The work of the Academic Department is designed primarily to meet the needs of the students in the vocational courses. Much of the work in these courses is dependent on an adequate foundation in English, mathematics and the arts and sciences. The relation of vocational to academic work is shown in each case under the outline of the course.

In addition to this work the department also offers an Academic Course. This course is given chiefly to meet the needs of students who enter the vocational courses, but who, finding that they possess the desire and aptitude for more advanced study than this school provides, desire to add to their work the few subjects which will properly prepare them for college. A limited number may also be enrolled who are unable to obtain an adequate high school education at their own homes.

No definite course is laid down for the students in this department as their objectives should determine its content. The minimum requirement for graduation is sixteen units including three years of English, a year of laboratory science, and a year of American History and Civics. All courses should be so arranged as to provide for three years of work in at least one academic subject besides English. Students who wish to enter college should take at least twelve units of academic work, which should be so arranged as to provide three years of work in at least two academic subjects besides English. The exact work taken would depend upon the course in which the student wishes to enroll in college. In every year electives may be chosen from the vocational subjects. Physical education is required throughout the course.

The following list indicates the subjects offered. It is not essential that all of them be taken or that they be arranged in the exact order given:

First year—English I, Algebra, History I, Biology, electives.

Second year—English II, Geometry, History II, Spanish I, electives.

Third year—English III, Trigonometry and Solid Geometry, Chemistry, Spanish II, electives.

Fourth year—Algebra II, U. S. History and Civics, Physics, Spanish III, electives.

Among the electives offered are music, public speaking, mechanical drawing, and subjects chosen from the courses in agriculture, mechanics, printing and home making.

### ENGLISH

**English Ia.** This course has two divisions, composition and literature, each being assigned a definite time in the week for class work and given its own rating. The course in composition attempts to train the student

to write neatly and legibly his opinions on subjects likely to be of interest to him, to avoid the most common grammatical mistakes as a matter of course and to spell accurately words of everyday use. His ability to stand before an audience is developed through informal talks on current events, school events and outside reading. The work in literature plans to acquaint the student with several pieces of good literature, to arouse an appreciation of good modern literature and to interpret the ideals expressed by the authors in terms of his own experiences.

*English Ib.* This is a special course in English which will be made thoroughly practical. It is arranged primarily for special students and will be closely correlated with the other subjects of this course, also with the school and home life of the student. Oral as well as written exercises will be required. The inspirational element rather than the technical will be emphasized. The use of good English is to be encouraged through the study and desire for good literature.

*English II.* This course has the same division as the course in English I. In composition the writing of straightforward reports of various kinds is developed through correlation with the vocational work and the school paper. Clearness, conciseness and accuracy of statement such as the mechanic or rancher may need are emphasized. Ability to address an audience is further developed by informal debating and reports. The work in literature aims to broaden the ideas of the student as to the ideals of men and women and to give them a standard by which he can judge literature after leaving school.

*English III.* The purpose of this course is to prepare the student for college and for the enjoyment of leisure hours. The work is as practical as possible, but is cultural as well as vocational. In composition the organization of material of fifteen hundred words or more is emphasized. The development of the ability to give reports of some length and to take charge of organizations and present propositions in a clear manner constitute the aim in oral English. Literature is studied chiefly from a point of view of literary appreciation and application of the ideals expressed by the author to present day experiences.

## MATHEMATICS

The courses in mathematics are designed to develop the reasoning power of the student and to strengthen his ability to solve actual problems as they will occur in his work.

*Algebra* expands the student's knowledge of arithmetic and drills him in a new system of reasoning which simplifies the solution of the more complicated problems that arise.

*Geometry, plane and solid,* gives an exact knowledge of the facts that are connected with plane figures, triangles, squares, circles, etc.; and with solids, cubes, spheres, etc.

*Trigonometry* deals with the relationships of angles and distances and is essential to work connected with land measurements and engineering.

*Vocational Mathematics I, Vocational Mathematics II.* These terms designate the first and second year sections of the two year course in mathematics which contain those elements of algebra, geometry, and trigonometry essential to vocational work. The practical application of these principles is emphasized in the daily work.

*Special Mathematics.* This course offers work especially arranged to meet needs of special students. The problems assigned will have particular application to the vocation in which the students are interested. It will offer a review of fundamental operations with constant application to every day problems of the farm, the shop and the home.

## HISTORY

*History I—Ancient and Medieval History.* This is a study of the ancient and medieval world. The past is studied particularly in its relation to present day life and institutions.

*History II—Modern European History.* Considers the study of the modern world with emphasis on the development of modern institutions and modern world conditions.

*History III—American History and Civics.* This subject undertakes the study of the history of the American people, particularly in its economic, civic, and social aspects. A study is made of present day conditions and the position of the United States as a world power.

## SCIENCE

*Biology.* Biology, a study of the science of living things, is intended to give the student some knowledge of the plant and animal kingdom and of the relationships of the different species to man's welfare. Important topics of the course are metabolism, plant and animal breeding, reproduction, the cell, evolution and hygiene. A well equipped laboratory and a thousand acres of school farm afford fine opportunities for work.

*Chemistry.* This course covers the fundamentals of the science of chemistry. It is a foundation course for later work in the chemistry of industry, the chemistry of agriculture, and the chemistry of the household.

*Applied Science.* The subject makes a study of those principles of physical science which are essential to a knowledge of the work given in the vocational courses. It may be taken either as a preparation for more advanced work in physics or as an independent course.

*Physics.* This course makes a study of the mechanics of liquids, gases, and solids and gives considerable attention to electricity, light and sound. It places considerable stress on the application of the principles of physics to the various industries and at the same time prepares the student for the higher courses in mechanics.

## SPANISH

Three years of Spanish is provided for those who desire it. The course is intended primarily for those students who desire to enter the universities, although others who wish to enter vocations which require knowledge of the language are also admitted to the course.

## MUSIC

A course in the elements of music is provided for those who wish it. A class in chorus singing is also offered to all students who have any vocal ability. A course in band and orchestra are furnished for those who have the necessary ability.

## PUBLIC SPEAKING

Interpretative speech is at last being recognized, not only as ornamental and cultural, but as actually useful and necessary. Men and women in business and professional lives are more and more recognizing their need of training for effective speech. It is the aim of this course to develop confident speakers who can effectively convey their own ideas or those of others.

## OCCUPATIONAL CIVICS

This course is required of all special students and Freshmen where program permits. It may be taken as an elective by any other student. Although a social science, considerable attention will be given to the economic and personal elements in the selection of a life work. The aim of this course is to assist every student to find himself. Instruction and investigation will be conducted with the purpose of developing the knowledge of and right attitude toward one's occupation, society, and the State.

## PHYSICAL EDUCATION

*For girls.* This work is required of all girls except those who bring certificates of disability from a physician. Each girl is required to procure the regulation gymnasium costume. While some work is given in the more formal gymnasium, special emphasis is placed on wholesome games played out of doors. Care is taken that too great physical demands on the strength of the individual student are not required.

*For boys.* The work in physical education for boys consists of two divisions: military drill and organized play. The physical exercise, the discipline, the habits of promptness and reliability inculcated by military drill, all are of great assistance in any occupation. The course gives the student an improved carriage, a better physique, a greater self-respect and an increased regard for the rights of others. The course in Organized Play is founded on the belief that out-of-door play, involving as it does the use of large muscle activities, is the most beneficial form of exercise for those boys who most greatly need it.

## PHOTOGRAPHY

Through the activities of a Camera Club students interested in photography will be instructed in the care and operation of the camera for both interior and exterior exposures and in the use of developing and fixing solutions and the making of lantern slides.

## OUTLINE OF COURSES OF STUDY

The California Polytechnic School offers the following courses of study of which extends over four years but is so arranged that students may specialize in particular phases of the work and complete the special project in a shorter time.

In the School of Agriculture major work in—

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|-------------------------|----------------------|------------------------------|
| 1. General Agriculture. | 7. Poultry Raising.  | 12. Green House Propagation. |
| 2. Dairying.            | 8. Truck Gardening.  | 13. Farm Shop.               |
| 3. Hog Raising.         | 9. Animal Husbandry. | 14. Butter Making.           |
| 4. Farm Crops.          | 10. Farm Mechanics.  | 15. Cheese Making.           |
| 5. Horticulture.        | 11. Floriculture.    | 16. Ice Cream Making.        |
| 6. Farm Management.     |                      |                              |

In the School of Engineering major work in—

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|--------------------|--------------------|-------------------|
| 1. Carpentry.      | 5. Electricity.    | 9. Forging.       |
| 2. Cabinet Making. | 6. Farm Mechanics. | 10. Machine Shop. |
| 3. Gas Engines.    | 7. Auto Mechanics. | 11. Hydraulics.   |
| 4. Steam Engines.  | 8. Surveying.      | 12. Drafting.     |



### PRACTICAL PROBLEMS IN HIGHWAY MAINTENANCE

In the School of Home Making major courses in—

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|------------------------------------|------------------|---------------------------------------|
| 1. Cooking.                        | 6. Child Care.   | 11. Cafeteria Cooking and Management. |
| 2. Sewing.                         | 7. Sanitation.   | 12. Home Planning.                    |
| 3. Millinery.                      | 8. First Aid.    | 13. Home Decoration.                  |
| 4. Garment Making.                 | 9. Home Nursing. | 14. Landscape Gardening.              |
| 5. Budgets and Household Accounts. | 10. Dietetics.   |                                       |

In the School of Printing major work in—

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|------------------------|---------------------|
| 1. Linotype Operation. | 2. Master Printing. |
|------------------------|---------------------|

In the Related Subjects special work in—

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|------------------------|----------------------|--------------------------|
| 1. English.            | 7. Chemistry.        | 13. Dramatics.           |
| 2. Mathematics.        | 8. Physics.          | 14. Athletics.           |
| 3. Band.               | 9. History.          | 15. Foreign Languages.   |
| 4. Citizenship.        | 10. Public Speaking. | 16. Elementary Science.  |
| 5. Physical Education. | 11. Hygiene.         | 17. Occupational Civics. |
| 6. Music.              | 12. Biology.         | 18. Photography.         |